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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,865	09/29/2003	In-oh Hwang	1793.1035	5399

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,865

Applicant(s)

HWANG ET AL.

Examiner

Martin J. Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/10/06 & 8/10/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/10/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1756

1. The response of the applicant has been read and given careful consideration. Rejections of the previous office action, not repeated below are withdrawn based upon the arguments and amendments to the claims. Responses to the arguments are presented after the first rejection to which they are directed. The rejection based upon Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol..41(3B) pp. 1876-1879 (March/2002) combined with Tseng et al. '455 is obviated by the perfection of priority (translations filed).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol..41(3B) pp. 1876-1879 (March/2002), in view of Nomura et al. JP 2002-133720.

Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol..41(3B) pp. 1876-1879 (March/2002) describes a polycarbonate disk with pits having a depth of 50 nm and lengths of 0.2-0.4 microns is provided with a reflective layer, followed by either GR-1 (Ag particles are 5 nm in silicon dioxide), or GR-2, where the Ag particles are 10nm in silicon dioxide) over coated with a dielectric layer to prevent the GR layer from mixing with the UV curable layer (section 2.3 and section 2.1). The provision of a dielectric layer between the reflective layer and the GR layer is disclosed on page

Art Unit: 1756

1878, left column. The reversal of the order of the reflective and GR layer is discussed with respect to figure 8 and appears to have no effect.

Nomura et al. JP 2002-133720 (machine translation attached) teach a near field (Super resolution) layer in a phase change optical recording medium. This layer is a dielectric layer, including SiO₂, ZnS-SiO₂, Al₂O₃ and SiN with metal particles, such as Au, Ag or Al dispersed therein. [0007].

In addition to the basis provided above the examiner holds that it would have been obvious to modify the media anticipated or rendered obvious by Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879 (March/2002) by using other dielectric materials and/or metal particles such as the Au (gold) disclosed by Nomura et al. JP 2002-133720 in place of the SiO₂-Ag near field enhancing layer of Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879 (March/2002) with a reasonable expectation of forming a useful optical recording medium having similar performance to that of the example of substrate/silicon/ZnS-SiO₂/GR.

The applicant is correct, in that folding in the limitations of claim 4 obviates the prior rejection. The applicant argues that the data presented represents an unobvious advantage over Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879. The examiner notes that only three examples are shown and that the effect will be dependent upon the density and size of the metal particles, therefore the showing is not commensurate with the scope of coverage sought as the claims currently embrace less than optimal compositions as well as those chosen by the

Art Unit: 1756

applicant. The layers within Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879

(March/2002) and Nomura et al. JP 2002-133720 are similar in composition and have the same disclosed effect, therefore there is a reasonable expectation of success in gaining the enhancement in the readout with the resulting super-resolution layer. As to the combinability, the examiner notes the inventors/authors in common in the two references applied and holds that this supports the analogous nature of the references and their combinability in the eye of one of ordinary skill in the art. Further, the term near field and super resolution are synonymous within the art. The rejection stands. **The applicant may wish to limit the claims to the metal being Rhodium (Rh) to obviate this rejection and those dependent upon it.**

4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879 (March/2002), in view of Nomura et al. JP 2002-133720, further in view of **either of** Ashida et al. JP 11-213447, Yuzusu et al. JP 10-106027 or Naruse et al. JP 06-295471.

Ashida et al. JP 11-213447 (machine translation attached) teaches Al, Ag, Au, or Cu dispersed in various dielectrics including silica, magnesium fluoride, calcium fluoride, zirconia, ZnS or titania [0027].

Yuzusu et al. JP 10-106027 (machine translation attached) teaches Fe, Co, Cr, Ti, Cu, Pt, Pd, Ni, V, Mo, W, Te, Ag, Au, or Cu dispersed in various dielectrics including oxides, sulfides, carbides and nitrides and mixtures thereof [0017].

Art Unit: 1756

Naruse et al. JP 06-295471 (machine translation attached) teaches Ni, Pt, Ni, Cr, Co, Al, Ag, Au, or Cu dispersed in various dielectrics including silica, magnesium fluoride, calcium fluoride, zirconia, ZnS or titania [0020].

In addition to the basis provided above the examiner holds that it would have been obvious to modify the media anticipated or rendered obvious by the combination of Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879 (March/2002) with Nomura et al. JP 2002-133720 by using other dielectric materials and/or metal particles such as the Au, Pd, Pt or the like disclosed by **either** of Ashida et al. JP 11-213447, Yuzusu et al. JP 10-106027 or Naruse et al. JP 06-295471 in place of the SiO₂-Ag near field enhancing layer of Nomura et al., "Super-resolution read only memory disk with metal nanoparticles or small aperture", Jap. J. Appl. Phys. Pt 1, vol.41(3B) pp. 1876-1879 (March/2002) with a reasonable expectation of forming a useful optical recording medium having similar performance to that of the example of substrate/silicon/ZnS-SiO₂/GR.

As discussed above, the near field layers of the prior art are super-resolution layers as they clearly increase the resolution beyond the diffraction limit of the laser (wavelength) used. The similarity, disclosure of equivalence and overlap of the materials used in the prior art references support the position of interchangeability and disclosed equivalent functionality. The position of the examiner is that the position of these layers adjacent to the recording layer and in the path of the laser beams allows them to function as super resolution/near field layers. The rejection stands.

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

Art Unit: 1756

improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-3 and 5-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-32 of U.S. Patent 7087284 (formerly 10/944421 (US 2005/0079313)). Although the conflicting claims are not identical, they are not patentably distinct from each other because the cited application includes the claimed mask layer as an alternative to metal oxide mask layers.

The applicant has declined to file a TD at this time. The rejection stands with the provisional nature withdrawn as the corresponding patent has issued.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

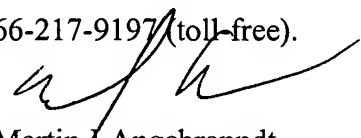
Art Unit: 1756

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt
Primary Examiner
Art Unit 1756

09/18/2006